

**Amendments to the Claims:**

This listing of claims will replace all prior versions and listings of claims in the application:

**Listing of claims:**

1. (Currently amended) A compound according to Formula (I) or a salt thereof:



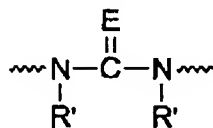
wherein

A comprises ~~at least one substantially cell-membrane-impermeable pendant group selected from natural, unnatural and synthetic amino acids, hydrophilic amines, peptides, polypeptides, thiol containing proteins and oligosaccharides, or a combination thereof~~ is selected from the group consisting of glutathione, glucosamine, cysteinylglycine, cysteic acid, aspartic acid, glutamic acid, lysine, and arginine, and wherein the sulfur atom of each sulfur containing compound is optionally a sulfoxide or sulfone;

X is selected from NR-, S(O)-, -S(O)O-, -S(O)<sub>2</sub>-, -S(O)<sub>2</sub>O-, -C(O)-, -C(S)-, -C(O)O-, C(S)O-, -C(S)S-, -P(O)(R<sub>1</sub>)-, -P(O)(R<sub>1</sub>)O-, or is absent;

B is selected from C<sub>1</sub>-C<sub>10</sub> alkylene, C<sub>2</sub>-C<sub>10</sub> alkenylene, C<sub>2</sub>-C<sub>10</sub> alkynylene, C<sub>3</sub>-C<sub>10</sub> cycloalkylene, C<sub>5</sub>-C<sub>10</sub> cycloalkenylene, C<sub>3</sub>-C<sub>10</sub> heterocycloalkylene, C<sub>5</sub>-C<sub>10</sub> heterocycloalkenylene, C<sub>6</sub>-C<sub>12</sub> arylene, heteroarylene or C<sub>2</sub>-C<sub>10</sub> acyl;

X' is selected from NR-, -O-, -S-, -Se-, -S-S-, S(O)-, -OS(O)-, OS(O)O-, -OS(O)<sub>2</sub>-, -OS(O)<sub>2</sub>O-, -S(O)O-, -S(O)<sub>2</sub>-, -S(O)<sub>2</sub>O-, -OP(O)(R<sub>1</sub>)-, -OP(O)(R<sub>1</sub>)O-, -OP(O)(R<sub>1</sub>)OP(O)(R<sub>1</sub>)O-, -C(O)-, -C(S)-, -C(O)O-, C(S)O-, -C(S)S-, -P(O)(R<sub>1</sub>)-, -P(O)(R<sub>1</sub>)O-,



or is absent; wherein E is O, S, Se, NR or N(R)<sub>2</sub><sup>+</sup>;

and

B' is selected from C<sub>1</sub>-C<sub>10</sub> alkylene, C<sub>2</sub>-C<sub>10</sub> alkenylene, C<sub>2</sub>-C<sub>10</sub> alkynylene, C<sub>3</sub>-C<sub>10</sub> cycloalkylene, C<sub>5</sub>-C<sub>10</sub> cycloalkenylene, C<sub>3</sub>-C<sub>10</sub> heterocycloalkylene, C<sub>5</sub>-C<sub>10</sub> heterocycloalkenylene, C<sub>6</sub>-C<sub>12</sub> arylene, and heteroarylene, or is absent;

wherein

each R is independently selected from hydrogen, C<sub>1</sub>-C<sub>10</sub> alkyl, C<sub>2</sub>-C<sub>10</sub> alkenyl, C<sub>2</sub>-C<sub>10</sub> alkynyl, C<sub>3</sub>-C<sub>10</sub> cycloalkyl, C<sub>5</sub>-C<sub>10</sub> cycloalkenyl, C<sub>3</sub>-C<sub>10</sub> heterocycloalkyl, C<sub>5</sub>-C<sub>10</sub> heterocycloalkenyl, C<sub>6</sub>-C<sub>12</sub> aryl, heteroaryl, OR<sub>2</sub> or C<sub>2</sub>-C<sub>10</sub> acyl;

R' is the same as R or two R' are taken together with the nitrogen atoms to which they are attached to form a 5 or 6-membered saturated or unsaturated heterocyclic ring;

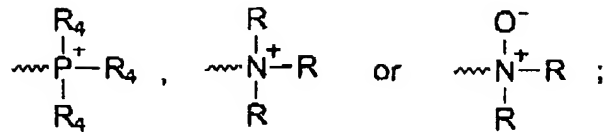
each R<sub>1</sub> is independently selected from hydrogen, C<sub>1</sub>-C<sub>10</sub> alkyl, C<sub>2</sub>-C<sub>10</sub> alkenyl, C<sub>2</sub>-C<sub>10</sub> alkynyl, C<sub>3</sub>-C<sub>10</sub> cycloalkyl, C<sub>5</sub>-C<sub>10</sub> cycloalkenyl, C<sub>3</sub>-C<sub>10</sub> heterocycloalkyl, C<sub>5</sub>-C<sub>10</sub> heterocycloalkenyl, C<sub>6</sub>-C<sub>12</sub> aryl, heteroaryl, halo, OR<sub>2</sub> or N(R)<sub>2</sub>;

each R<sub>2</sub> is independently selected from hydrogen, C<sub>1</sub>-C<sub>10</sub> alkyl, C<sub>2</sub>-C<sub>10</sub> alkenyl, C<sub>2</sub>-C<sub>10</sub> alkynyl, C<sub>3</sub>-C<sub>10</sub> cycloalkyl, C<sub>5</sub>-C<sub>10</sub> cycloalkenyl, C<sub>3</sub>-C<sub>10</sub> heterocycloalkyl, C<sub>5</sub>-C<sub>10</sub> heterocycloalkenyl, C<sub>6</sub>-C<sub>12</sub> aryl, heteroaryl or -C(O)R<sub>5</sub>;

each R<sub>5</sub> is independently selected from hydrogen, C<sub>1</sub>-C<sub>10</sub> alkyl, C<sub>2</sub>-C<sub>10</sub> alkenyl, C<sub>2</sub>-C<sub>10</sub> alkynyl, C<sub>3</sub>-C<sub>10</sub> cycloalkyl, C<sub>5</sub>-C<sub>10</sub> cycloalkenyl, C<sub>3</sub>-C<sub>10</sub> heterocycloalkyl, C<sub>5</sub>-C<sub>10</sub> heterocycloalkenyl, C<sub>6</sub>-C<sub>12</sub> aryl, heteroaryl, C<sub>1</sub>-C<sub>10</sub> alkoxy, C<sub>3</sub>-C<sub>10</sub> alkenyloxy, C<sub>3</sub>-C<sub>10</sub> alkynyloxy, C<sub>3</sub>-C<sub>10</sub> cycloalkyloxy, C<sub>5</sub>-C<sub>10</sub> cycloalkenyloxy, C<sub>3</sub>-C<sub>10</sub> heterocycloalkyloxy, C<sub>5</sub>-C<sub>10</sub> heterocycloalkenyloxy, C<sub>6</sub>-C<sub>12</sub> aryloxy, heteroaryloxy, C<sub>1</sub>-C<sub>10</sub> alkylthio, C<sub>3</sub>-C<sub>10</sub> alkenylthio, C<sub>3</sub>-C<sub>10</sub> alkynylthio, C<sub>3</sub>-C<sub>10</sub> cycloalkylthio, C<sub>5</sub>-C<sub>10</sub> cycloalkenylthio, C<sub>3</sub>-C<sub>10</sub> heterocycloalkylthio, C<sub>5</sub>-C<sub>10</sub> heterocycloalkenylthio, C<sub>6</sub>-C<sub>12</sub> arylthio, heteroarylthio, OH, SH or N(R)<sub>2</sub>;

wherein for each instance that B and/or B' is arylene, the substituents directly attached to the respective arylene rings are in a para, meta or ortho relationship, and

wherein each alkylene, alkenylene, alkynylene, cycloalkylene, cycloalkenylenylene, heterocycloalkylene, heterocycloalkenylenylene, arylene, heteroarylene and acyl are optionally independently substituted with hydrogen, C<sub>1</sub>-C<sub>10</sub> alkyl, C<sub>2</sub>-C<sub>10</sub> alkenyl, C<sub>2</sub>-C<sub>10</sub> alkynyl, C<sub>3</sub>-C<sub>10</sub> cycloalkyl, C<sub>5</sub>-C<sub>10</sub> cycloalkenyl, C<sub>3</sub>-C<sub>10</sub> heterocycloalkyl, C<sub>5</sub>-C<sub>10</sub> heterocycloalkenyl, C<sub>6</sub>-C<sub>12</sub> aryl, heteroaryl, halo, cyano, cyanate, isocyanate, OR<sub>2a</sub>, SR<sub>6</sub>, nitro, arsenoxide, -S(O)R<sub>3</sub>, -OS(O)R<sub>3</sub>, -S(O)<sub>2</sub>R<sub>3</sub>, -OS(O)<sub>2</sub>R<sub>3</sub>, -P(O)R<sub>4</sub>R<sub>4</sub>, -OP(O)R<sub>4</sub>R<sub>4</sub>, -N(R'')<sub>2</sub>, -NRC(O)(CH<sub>2</sub>)<sub>m</sub>Q, -C(O)R<sub>5</sub>,



wherein R, R<sub>1</sub> and R<sub>5</sub> are as defined above; and

R<sub>2a</sub> is selected from hydrogen, C<sub>1</sub>-C<sub>5</sub> alkyl, C<sub>2</sub>-C<sub>5</sub> alkenyl, C<sub>2</sub>-C<sub>5</sub> alkynyl, C<sub>3</sub>-C<sub>10</sub> cycloalkyl, C<sub>5</sub>-C<sub>10</sub> cycloalkenyl, C<sub>6</sub>-C<sub>12</sub> aryl, -S(O)R<sub>3</sub>, -S(O)<sub>2</sub>R<sub>3</sub>, -P(O)(R<sub>4</sub>)<sub>2</sub>, N(R)<sub>2</sub> or -C(O)R<sub>5</sub>;

each R<sub>3</sub> is independently selected from hydrogen, C<sub>1</sub>-C<sub>10</sub> alkyl, C<sub>2</sub>-C<sub>10</sub> alkenyl, C<sub>2</sub>-C<sub>10</sub> alkynyl, C<sub>3</sub>-C<sub>10</sub> cycloalkyl, C<sub>5</sub>-C<sub>10</sub> cycloalkenyl, C<sub>3</sub>-C<sub>10</sub> heterocycloalkyl, C<sub>5</sub>-C<sub>10</sub> heterocycloalkenyl, C<sub>6</sub>-C<sub>12</sub> aryl, heteroaryl, C<sub>1</sub>-C<sub>10</sub> alkoxy, C<sub>3</sub>-C<sub>10</sub> alkenyloxy, C<sub>3</sub>-C<sub>10</sub> alkynyloxy, C<sub>3</sub>-C<sub>10</sub> cycloalkyloxy, C<sub>5</sub>-C<sub>10</sub> cycloalkenyloxy, C<sub>3</sub>-C<sub>10</sub> heterocycloalkyloxy, C<sub>5</sub>-C<sub>10</sub> heterocycloalkenyloxy, C<sub>6</sub>-C<sub>12</sub> aryloxy, heteroaryloxy, C<sub>1</sub>-C<sub>10</sub> alkylthio, C<sub>3</sub>-C<sub>10</sub> alkenylthio, C<sub>3</sub>-C<sub>10</sub> alkynylthio, C<sub>3</sub>-C<sub>10</sub> cycloalkylthio, C<sub>5</sub>-C<sub>10</sub> cycloalkenylthio, C<sub>3</sub>-C<sub>10</sub> heterocycloalkylthio, C<sub>5</sub>-C<sub>10</sub> heterocycloalkenylthio, C<sub>6</sub>-C<sub>12</sub> arylthio, heteroarylthio or N(R)<sub>2</sub>;

each R<sub>4</sub> is independently selected from hydrogen, C<sub>1</sub>-C<sub>10</sub> alkyl, C<sub>2</sub>-C<sub>10</sub> alkenyl, C<sub>2</sub>-C<sub>10</sub> alkynyl, C<sub>3</sub>-C<sub>10</sub> cycloalkyl, C<sub>5</sub>-C<sub>10</sub> cycloalkenyl, C<sub>3</sub>-C<sub>10</sub> heterocycloalkyl, C<sub>5</sub>-C<sub>10</sub> heterocycloalkenyl, C<sub>6</sub>-C<sub>12</sub> aryl, heteroaryl, C<sub>1</sub>-C<sub>10</sub> alkoxy, C<sub>3</sub>-C<sub>10</sub> alkenyloxy, C<sub>3</sub>-C<sub>10</sub> alkynyloxy, C<sub>3</sub>-C<sub>10</sub> cycloalkyloxy, C<sub>5</sub>-C<sub>10</sub> cycloalkenyloxy, C<sub>3</sub>-C<sub>10</sub> heterocycloalkyloxy, C<sub>5</sub>-C<sub>10</sub> heterocycloalkenyloxy, C<sub>6</sub>-C<sub>12</sub> aryloxy, heteroaryloxy, C<sub>1</sub>-C<sub>10</sub> alkylthio, C<sub>3</sub>-C<sub>10</sub> alkenylthio, C<sub>3</sub>-C<sub>10</sub> alkynylthio, C<sub>3</sub>-C<sub>10</sub> cycloalkylthio, C<sub>5</sub>-C<sub>10</sub> cycloalkenylthio, C<sub>3</sub>-C<sub>10</sub> heterocycloalkylthio, C<sub>5</sub>-C<sub>10</sub> heterocycloalkenylthio, C<sub>6</sub>-C<sub>12</sub> arylthio, heteroarylthio, halo or N(R)<sub>2</sub>;

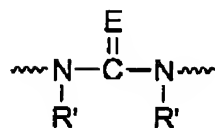
R<sub>6</sub> is selected from C<sub>1</sub>-C<sub>10</sub> alkyl, C<sub>2</sub>-C<sub>10</sub> alkenyl, C<sub>2</sub>-C<sub>10</sub> alkynyl, C<sub>3</sub>-C<sub>10</sub> cycloalkyl, C<sub>5</sub>-C<sub>10</sub> cycloalkenyl, C<sub>3</sub>-C<sub>10</sub> heterocycloalkyl, C<sub>5</sub>-C<sub>10</sub> heterocycloalkenyl, C<sub>6</sub>-C<sub>12</sub> aryl, heteroaryl, C<sub>1</sub>-C<sub>10</sub> alkylthio, C<sub>3</sub>-C<sub>10</sub> alkenylthio, C<sub>3</sub>-C<sub>10</sub> alkynylthio, C<sub>3</sub>-C<sub>10</sub> cycloalkylthio, C<sub>5</sub>-C<sub>10</sub> cycloalkenylthio, C<sub>3</sub>-C<sub>10</sub> heterocycloalkylthio, C<sub>5</sub>-C<sub>10</sub> heterocycloalkenylthio, C<sub>6</sub>-C<sub>12</sub> arylthio, heteroarylthio, -S(O)R<sub>3</sub>, -S(O)<sub>2</sub>R<sub>3</sub> or -C(O)R<sub>5</sub>.

R'' is the same as R or two R'' taken together with the N atom to which they are attached may form a saturated, unsaturated or aromatic heterocyclic ring system;  
 Q is selected from halogen and  $-\text{OS}(\text{O})_2\text{Q}_1$ ; wherein  $\text{Q}_1$  is selected from  $\text{C}_1$ - $\text{C}_4$  alkyl,  $\text{C}_1$ - $\text{C}_4$  perfluoroalkyl, phenyl, *p*-methylphenyl;  
 m is an integer selected from 1 to 5,  
 Y comprises at least one arsenoxide group;  
 p is an integer selected from 1 to 10;  
 n is an integer selected from 0 to 20, and  
 wherein the sum total of carbon atoms in A and  $(\text{XBX}')_n\text{B}'$   $[[\text{L}]]$  together, is greater than 6, and with the proviso that:

~~when Y is arsenoxide, X is C=O or NR where R is hydrogen, B is C<sub>6</sub>-arylene optionally substituted with amine, X' is absent, n is 1, and B' is absent, then A is not a hydrophilic amine.~~

- 2-9. (Canceled)
10. (Currently amended) The compound or salt thereof according to claim 1, wherein A is glutathione.
11. (Currently amended) The compound or salt thereof according to claim 1, wherein p is an integer from 1 to 5.
12. (Currently amended) The compound or salt thereof according to claim 1, wherein p is 1.
13. (Canceled)
14. (Currently amended) The compound or salt thereof according to claim 1, wherein X is selected from NR-,  $-\text{C}(\text{O})-$ ,  $-\text{C}(\text{S})-$ ,  $-\text{C}(\text{O})\text{O}-$ ,  $-\text{C}(\text{S})\text{O}-$ ,  $-\text{C}(\text{S})\text{S}-$ , or is absent;  
 B is selected from  $\text{C}_1$ - $\text{C}_5$  alkylene,  $\text{C}_2$ - $\text{C}_5$  alkenylene,  $\text{C}_2$ - $\text{C}_5$  alkynylene,  $\text{C}_3$ - $\text{C}_{10}$  cycloalkylene,  $\text{C}_5$ - $\text{C}_{10}$  cycloalkenylene,  $\text{C}_6$ - $\text{C}_{12}$  arylene or  $\text{C}_2$ - $\text{C}_5$  acyl;

X' is selected from -O-, -S-, -NR-, -S-S-, -S(O)-, -S(O)<sub>2</sub>-, -P(O)(R<sub>1</sub>)-, -OP(O)(R<sub>1</sub>)-,  
OP(O)(R<sub>1</sub>)O-, -OP(O)(R<sub>1</sub>)OP(O)(R<sub>1</sub>)O-, -C(O)-, -C(S)-, -C(O)O-, -C(S)O-, -  
C(S)S-, -Se-,



or is absent; wherein E is O, S or N(R)<sub>2</sub><sup>+</sup>;

n is 0, 1 or 2; and

B' is C<sub>1</sub>-C<sub>5</sub> alkylene, C<sub>2</sub>-C<sub>5</sub> alkenylene, C<sub>2</sub>-C<sub>5</sub> alkynylene, C<sub>3</sub>-C<sub>10</sub> cycloalkylene, C<sub>5</sub>-C<sub>10</sub>  
cycloalkenylene, C<sub>6</sub>-C<sub>12</sub> arylene or is absent; and wherein

each R is independently selected from hydrogen, C<sub>1</sub>-C<sub>5</sub> alkyl, C<sub>2</sub>-C<sub>5</sub> alkenyl, C<sub>2</sub>-C<sub>5</sub>  
alkynyl, C<sub>3</sub>-C<sub>10</sub> cycloalkyl, C<sub>5</sub>-C<sub>10</sub> cycloalkenyl, C<sub>6</sub>-C<sub>12</sub> aryl, OR<sub>2</sub> or C<sub>2</sub>-C<sub>10</sub> acyl;

R' is the same as R;

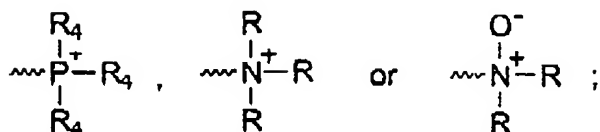
each R<sub>1</sub> is independently selected from hydrogen, C<sub>1</sub>-C<sub>5</sub> alkyl, C<sub>2</sub>-C<sub>5</sub> alkenyl, C<sub>2</sub>-C<sub>5</sub>  
alkynyl, C<sub>3</sub>-C<sub>10</sub> cycloalkyl, C<sub>5</sub>-C<sub>10</sub> cycloalkenyl, C<sub>6</sub>-C<sub>12</sub> aryl, halo, OR<sub>2</sub> or N(R)<sub>2</sub>;

each R<sub>2</sub> is independently selected from hydrogen, C<sub>1</sub>-C<sub>5</sub> alkyl, C<sub>2</sub>-C<sub>5</sub> alkenyl, C<sub>2</sub>-C<sub>5</sub>  
alkynyl, C<sub>3</sub>-C<sub>10</sub> cycloalkyl, C<sub>5</sub>-C<sub>10</sub> cycloalkenyl, C<sub>6</sub>-C<sub>12</sub> aryl or -C(O)R<sub>5</sub>;

each R<sub>5</sub> is independently selected from hydrogen, C<sub>1</sub>-C<sub>5</sub> alkyl, C<sub>2</sub>-C<sub>5</sub> alkenyl, C<sub>2</sub>-C<sub>5</sub>  
alkynyl, C<sub>3</sub>-C<sub>10</sub> cycloalkyl, C<sub>5</sub>-C<sub>10</sub> cycloalkenyl, C<sub>6</sub>-C<sub>12</sub> aryl, C<sub>1</sub>-C<sub>5</sub> alkoxy, C<sub>3</sub>-C<sub>5</sub>  
alkenyloxy, C<sub>3</sub>-C<sub>5</sub> alkynyloxy, C<sub>3</sub>-C<sub>10</sub> cycloalkyloxy, C<sub>3</sub>-C<sub>10</sub> cycloalkenyloxy, C<sub>6</sub>-  
C<sub>12</sub> aryloxy, C<sub>1</sub>-C<sub>5</sub> alkylthio, C<sub>3</sub>-C<sub>5</sub> alkenylthio, C<sub>3</sub>-C<sub>5</sub> alkynylthio, C<sub>3</sub>-C<sub>10</sub>  
cycloalkylthio, C<sub>5</sub>-C<sub>10</sub> cycloalkenylthio, C<sub>6</sub>-C<sub>12</sub> arylthio, OH, SH or N(R)<sub>2</sub>;

wherein each instance of arylene may have substituents A and X or X and Y in a para,  
meta or ortho relationship, and

wherein each alkylene, alkenylene, alkynylene, cycloalkylene, cycloalkenylene, arylene,  
and acyl are optionally independently substituted with hydrogen, C<sub>1</sub>-C<sub>5</sub> alkyl, C<sub>2</sub>-  
C<sub>5</sub> alkenyl, C<sub>2</sub>-C<sub>5</sub> alkynyl, C<sub>3</sub>-C<sub>10</sub> cycloalkyl, C<sub>5</sub>-C<sub>10</sub> cycloalkenyl, C<sub>6</sub>-C<sub>12</sub> aryl,  
halo, cyanate, isocyanate, OR<sub>23</sub>, SR<sub>6</sub>, nitro, arsenoxide, -S(O)R<sub>3</sub>, -OS(O)R<sub>3</sub>, -  
S(O)<sub>2</sub>R<sub>3</sub>, -OS(O)<sub>2</sub>R<sub>3</sub>, -P(O)R<sub>4</sub>R<sub>4</sub>, -OP(O)R<sub>4</sub>R<sub>4</sub>, -N(R'')<sub>2</sub>, NRC(O)(CH<sub>2</sub>)<sub>m</sub>Q, -  
C(O)R<sub>5</sub>,



wherein R, R<sub>1</sub> and R<sub>5</sub> are as defined above; and

R<sub>2a</sub> selected from hydrogen, C<sub>1</sub>-C<sub>5</sub> alkyl, C<sub>2</sub>-C<sub>5</sub> alkenyl, C<sub>2</sub>-C<sub>5</sub> alkynyl, C<sub>3</sub>-C<sub>10</sub> cycloalkyl, C<sub>5</sub>-C<sub>10</sub> cycloalkenyl, C<sub>6</sub>-C<sub>12</sub> aryl, -S(O)R<sub>3</sub>, -S(O)<sub>2</sub>R<sub>3</sub>, -P(O)(R<sub>4</sub>)<sub>2</sub>, N(R)<sub>2</sub> or -C(O)R<sub>5</sub>;

each R<sub>3</sub> is independently selected from hydrogen, C<sub>1</sub>-C<sub>5</sub> alkyl, C<sub>2</sub>-C<sub>5</sub> alkenyl, C<sub>2</sub>-C<sub>5</sub> alkynyl, C<sub>3</sub>-C<sub>10</sub> cycloalkyl, C<sub>5</sub>-C<sub>10</sub> cycloalkenyl, C<sub>6</sub>-C<sub>12</sub> aryl, C<sub>1</sub>-C<sub>5</sub> alkoxy, C<sub>3</sub>-C<sub>5</sub> alkenyloxy, C<sub>3</sub>-C<sub>5</sub> alkynyloxy, C<sub>3</sub>-C<sub>10</sub> cycloalkyloxy, C<sub>5</sub>-C<sub>10</sub> cycloalkenyloxy, C<sub>6</sub>-C<sub>12</sub> aryloxy, C<sub>1</sub>-C<sub>5</sub> alkylthio, C<sub>3</sub>-C<sub>5</sub> alkenylthio, C<sub>3</sub>-C<sub>5</sub> alkynylthio, C<sub>3</sub>-C<sub>10</sub> cycloalkylthio, C<sub>5</sub>-C<sub>10</sub> cycloalkenylthio, C<sub>6</sub>-C<sub>12</sub> arylthio or N(R)<sub>2</sub>;

each R<sub>4</sub> is independently selected from hydrogen, C<sub>1</sub>-C<sub>5</sub> alkyl, C<sub>2</sub>-C<sub>5</sub> alkenyl, C<sub>2</sub>-C<sub>5</sub> alkynyl, C<sub>3</sub>-C<sub>10</sub> cycloalkyl, C<sub>5</sub>-C<sub>10</sub> cycloalkenyl, C<sub>6</sub>-C<sub>12</sub> aryl, C<sub>1</sub>-C<sub>5</sub> alkoxy, C<sub>3</sub>-C<sub>5</sub> alkenyloxy, C<sub>3</sub>-C<sub>5</sub> alkynyloxy, C<sub>3</sub>-C<sub>10</sub> cycloalkyloxy, C<sub>5</sub>-C<sub>10</sub> cycloalkenyloxy, C<sub>6</sub>-C<sub>12</sub> aryloxy, C<sub>1</sub>-C<sub>5</sub> alkylthio, C<sub>3</sub>-C<sub>5</sub> alkenylthio, C<sub>3</sub>-C<sub>5</sub> alkynylthio, C<sub>3</sub>-C<sub>5</sub> cycloalkylthio, C<sub>5</sub>-C<sub>5</sub> cycloalkenylthio, C<sub>6</sub>-C<sub>12</sub> arylthio, halo or N(R)<sub>2</sub>;

R<sub>6</sub> is independently selected from C<sub>1</sub>-C<sub>5</sub> alkyl, C<sub>2</sub>-C<sub>5</sub> alkenyl, C<sub>2</sub>-C<sub>5</sub> alkynyl, C<sub>3</sub>-C<sub>10</sub> cycloalkyl, C<sub>5</sub>-C<sub>10</sub> cycloalkenyl, C<sub>6</sub>-C<sub>12</sub> aryl, C<sub>1</sub>-C<sub>5</sub> alkylthio, C<sub>3</sub>-C<sub>5</sub> alkenylthio, C<sub>3</sub>-C<sub>5</sub> alkynylthio, C<sub>3</sub>-C<sub>10</sub> cycloalkylthio, C<sub>5</sub>-C<sub>10</sub> cycloalkenylthio, C<sub>6</sub>-C<sub>12</sub> arylthio, -S(O)R<sub>3</sub>, -S(O)<sub>2</sub>R<sub>3</sub> or -C(O)R<sub>5</sub>,

R'' is the same as R;

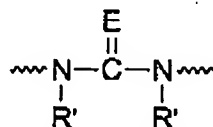
Q is selected from halogen and -OS(O)<sub>2</sub>Q<sub>1</sub>; wherein Q<sub>1</sub> is selected from C<sub>1</sub>-C<sub>4</sub> alkyl, C<sub>1</sub>-C<sub>4</sub> perfluoroalkyl, phenyl, *p*-methylphenyl; and

m is an integer from 1 to 5, and

wherein the sum total of carbon atoms in A and (XBX')<sub>m</sub>B' together, is greater than 6.

15. (Currently amended) A compound or salt thereof according to claim 1, wherein  
X is absent;  
B is selected from C<sub>1</sub>-C<sub>5</sub> alkylene, C<sub>6</sub>-C<sub>12</sub> arylene or C<sub>2</sub>-C<sub>5</sub> acyl;

X' is selected from -O-, -S-, -NR-, -S-S-, -S(O)-, -S(O)<sub>2</sub>-, -P(O)(R<sub>1</sub>)-, -C(O)-, -C(S)-, -C(O)O-, -C(S)O-, -Se-,



or absent; wherein E is O, S or N(R)<sub>2</sub><sup>+</sup>;

n is 0, 1 or 2; and

B' is C<sub>1</sub>-C<sub>5</sub> alkylene, C<sub>6</sub>-C<sub>12</sub> arylene or is absent; and wherein

each R is independently selected from hydrogen, C<sub>1</sub>-C<sub>5</sub> alkyl, C<sub>3</sub>-C<sub>10</sub> cycloalkyl, C<sub>6</sub>-C<sub>12</sub> aryl, OR<sub>2</sub> or C<sub>2</sub>-C<sub>5</sub> acyl;

R' is the same as R;

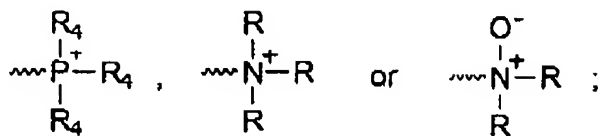
each R<sub>1</sub> is independently selected from hydrogen, C<sub>1</sub>-C<sub>5</sub> alkyl, C<sub>3</sub>-C<sub>10</sub> cycloalkyl, C<sub>6</sub>-C<sub>12</sub> aryl, halo, OR<sub>2</sub> or N(R)<sub>2</sub>;

each R<sub>2</sub> is independently selected from hydrogen, C<sub>1</sub>-C<sub>5</sub> alkyl, C<sub>3</sub>-C<sub>10</sub> cycloalkyl, C<sub>6</sub>-C<sub>12</sub> aryl or -C(O)R<sub>5</sub>;

each R<sub>5</sub> is independently selected from hydrogen, C<sub>1</sub>-C<sub>5</sub> alkyl, C<sub>2</sub>-C<sub>5</sub> alkenyl, C<sub>3</sub>-C<sub>10</sub> cycloalkyl, C<sub>5</sub>-C<sub>10</sub> cycloalkenyl, C<sub>6</sub>-C<sub>12</sub> aryl, C<sub>1</sub>-C<sub>5</sub> alkoxy, C<sub>3</sub>-C<sub>5</sub> alkenyloxy, C<sub>3</sub>-C<sub>10</sub> cycloalkyloxy, C<sub>5</sub>-C<sub>10</sub> cycloalkenyloxy, C<sub>6</sub>-C<sub>12</sub> aryloxy, C<sub>1</sub>-C<sub>5</sub> alkylthio, C<sub>3</sub>-C<sub>5</sub> alkenylthio, C<sub>3</sub>-C<sub>10</sub> cycloalkylthio, C<sub>5</sub>-C<sub>10</sub> cycloalkenylthio, C<sub>6</sub>-C<sub>12</sub> arylthio, OH, SH or N(R)<sub>2</sub>;

wherein for each instance that B and/or B' is arylene, the substituents directly attached to the respective arylene rings are in a para, meta or ortho relationship, and

wherein each alkylene, alkenylene, alkynylene, cycloalkylene, cycloalkenylene, arylene, and acyl are optionally independently substituted with hydrogen, C<sub>1</sub>-C<sub>5</sub> alkyl, C<sub>2</sub>-C<sub>5</sub> alkenyl, C<sub>2</sub>-C<sub>5</sub> alkynyl, C<sub>3</sub>-C<sub>10</sub> cycloalkyl, C<sub>5</sub>-C<sub>10</sub> cycloalkenyl, C<sub>6</sub>-C<sub>12</sub> aryl, halo, cyano, cyanate, isocyanate, OR<sub>2a</sub>, SR<sub>6</sub>, nitro, arsenoxide, -S(O)R<sub>3</sub>, -OS(O)R<sub>3</sub>, -S(O)<sub>2</sub>R<sub>3</sub>, -OS(O)<sub>2</sub>R<sub>3</sub>, -P(O)R<sub>4</sub>R<sub>4</sub>, -OP(O)R<sub>4</sub>R<sub>4</sub>, -N(R'')<sub>2</sub>, -NRC(O)(CH<sub>2</sub>)<sub>m</sub>Q, -C(O)R<sub>5</sub>,



wherein R, R<sub>1</sub> and R<sub>5</sub> are as defined above; and

R<sub>2a</sub> is selected from hydrogen, C<sub>1</sub>-C<sub>5</sub> alkyl, C<sub>3</sub>-C<sub>10</sub> cycloalkyl, C<sub>6</sub>-C<sub>12</sub> aryl, -

S(O)R<sub>3</sub>, -S(O)<sub>2</sub>R<sub>3</sub>, -P(O)(R<sub>4</sub>)<sub>2</sub> and -C(O)R<sub>5</sub>;

each R<sub>3</sub> is independently selected from hydrogen, C<sub>1</sub>-C<sub>5</sub> alkyl, C<sub>3</sub>-C<sub>10</sub> cycloalkyl, C<sub>6</sub>-C<sub>12</sub> aryl, C<sub>1</sub>-C<sub>5</sub> alkoxy, C<sub>3</sub>-C<sub>10</sub> cycloalkyloxy, C<sub>6</sub>-C<sub>12</sub> aryloxy, C<sub>1</sub>-C<sub>5</sub> alkylthio, C<sub>3</sub>-C<sub>10</sub> cycloalkylthio, C<sub>6</sub>-C<sub>12</sub> arylthio or N(R)<sub>2</sub>;

each R<sub>4</sub> is independently selected from hydrogen, C<sub>1</sub>-C<sub>5</sub> alkyl, C<sub>3</sub>-C<sub>10</sub> cycloalkyl, C<sub>6</sub>-C<sub>12</sub> aryl, C<sub>1</sub>-C<sub>5</sub> alkoxy, C<sub>3</sub>-C<sub>10</sub> cycloalkyloxy, C<sub>6</sub>-C<sub>12</sub> aryloxy, halo or N(R)<sub>2</sub>;

R<sub>6</sub> is selected from C<sub>1</sub>-C<sub>5</sub> alkyl, C<sub>3</sub>-C<sub>10</sub> cycloalkyl, C<sub>6</sub>-C<sub>12</sub> aryl, C<sub>1</sub>-C<sub>5</sub> alkylthio, C<sub>3</sub>-C<sub>10</sub> cycloalkylthio, C<sub>6</sub>-C<sub>12</sub> arylthio, -S(O)R<sub>3</sub>, -S(O)<sub>2</sub>R<sub>3</sub> or -C(O)R<sub>5</sub>;

R'' is the same as R;

Q is selected from halogen and -OS(O)<sub>2</sub>Q<sub>1</sub>; wherein Q<sub>1</sub> is selected from C<sub>1</sub>-C<sub>4</sub> alkyl, C<sub>1</sub>-C<sub>4</sub> perfluoroalkyl, phenyl, *p*-methylphenyl; and

m is 1 to 5.

16. (Currently amended) A-The compound or salt thereof according to claim 1, wherein

X is absent;

B is selected from C<sub>1</sub>-C<sub>5</sub> alkylene, C<sub>6</sub>-C<sub>12</sub> arylene or C<sub>2</sub>-C<sub>5</sub> acyl;

X' is selected from -O-, -S-, -NR-, -C(O)-, -C(O)O-, or is absent;

n is 1; and

B' is C<sub>1</sub>-C<sub>5</sub> alkylene, C<sub>6</sub>-C<sub>12</sub> arylene or is absent; and

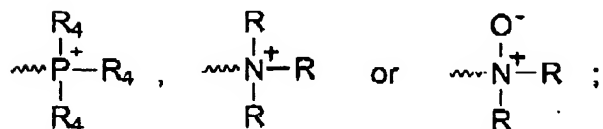
R is selected from hydrogen, C<sub>1</sub>-C<sub>5</sub> alkyl, C<sub>6</sub>-C<sub>12</sub> aryl or C<sub>2</sub>-C<sub>5</sub> acyl;

wherein for each instance that B and/or B' is arylene, the substituents directly attached to the respective arylene rings are in a para, meta or ortho relationship, and

wherein each alkylene, arylene, and acyl are optionally independently substituted with hydrogen, C<sub>1</sub>-C<sub>5</sub> alkyl, C<sub>2</sub>-C<sub>5</sub> alkenyl, C<sub>2</sub>-C<sub>5</sub> alkynyl, C<sub>3</sub>-C<sub>10</sub> cycloalkyl, C<sub>5</sub>-C<sub>10</sub>



cycloalkenyl, C<sub>6</sub>-C<sub>12</sub> aryl, halo, cyano, cyanate, isocyanate, OR<sub>2a</sub>, SR<sub>6</sub>, nitro, arsenoxide, -S(O)R<sub>3</sub>, -S(O)<sub>2</sub>R<sub>3</sub>, -P(O)R<sub>4</sub>R<sub>4</sub>, -N(R'')<sub>2</sub>, -NRC(O)(CH<sub>2</sub>)<sub>n</sub>Q, -C(O)R<sub>5</sub>,



wherein each R is independently selected from hydrogen, C<sub>1</sub>-C<sub>5</sub> alkyl, C<sub>6</sub>-C<sub>12</sub> aryl or C<sub>2</sub>-C<sub>5</sub> acyl;

R<sub>2a</sub> is selected from hydrogen, C<sub>1</sub>-C<sub>5</sub> alkyl, C<sub>6</sub>-C<sub>12</sub> aryl, -S(O)R<sub>3</sub>, -S(O)<sub>2</sub>R<sub>3</sub>, -P(O)(R<sub>4</sub>)<sub>2</sub> or -C(O)R<sub>5</sub>;

each R<sub>3</sub> is independently selected from hydrogen, C<sub>1</sub>-C<sub>5</sub> alkyl, C<sub>6</sub>-C<sub>12</sub> aryl, C<sub>1</sub>-C<sub>5</sub> alkoxy, C<sub>6</sub>-C<sub>12</sub> aryloxy, C<sub>1</sub>-C<sub>5</sub> alkylthio, or C<sub>6</sub>-C<sub>12</sub> arylthio;

each R<sub>4</sub> is independently selected from hydrogen, C<sub>1</sub>-C<sub>5</sub> alkyl, C<sub>6</sub>-C<sub>12</sub> aryl, C<sub>1</sub>-C<sub>5</sub> alkoxy, C<sub>6</sub>-C<sub>12</sub> aryloxy, C<sub>1</sub>-C<sub>5</sub> alkylthio, C<sub>6</sub>-C<sub>12</sub> arylthio, halo or N(R)<sub>2</sub>;

each R<sub>5</sub> is independently selected from hydrogen, C<sub>1</sub>-C<sub>5</sub> alkyl, C<sub>6</sub>-C<sub>12</sub> aryl, C<sub>1</sub>-C<sub>5</sub> alkoxy, C<sub>6</sub>-C<sub>12</sub> aryloxy, C<sub>1</sub>-C<sub>5</sub> alkylthio, C<sub>6</sub>-C<sub>12</sub> arylthio, OH, SH or N(R)<sub>2</sub>;

R<sub>6</sub> is selected from C<sub>1</sub>-C<sub>5</sub> alkyl, C<sub>6</sub>-C<sub>12</sub> aryl, C<sub>1</sub>-C<sub>5</sub> alkylthio, C<sub>6</sub>-C<sub>12</sub> arylthio, -S(O)R<sub>3</sub>, -S(O)<sub>2</sub>R<sub>3</sub> or -C(O)R<sub>5</sub>;

R'' is the same as R above;

Q is selected from halogen and -OS(O)<sub>2</sub>Q<sub>1</sub>; wherein Q<sub>1</sub> is selected from C<sub>1</sub>-C<sub>4</sub> alkyl, C<sub>1</sub>-C<sub>4</sub> perfluoroalkyl, phenyl, *p*-methylphenyl; and

m is 1 to 5.

17. (Currently amended) ~~A-~~The compound or salt thereof according to claim 1, wherein

X is absent;

B is C<sub>2</sub>-C<sub>5</sub> acyl;

X' is NR;

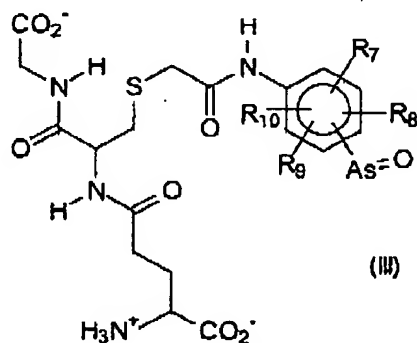
n is 1;

B' is phenylene; and

R is H;

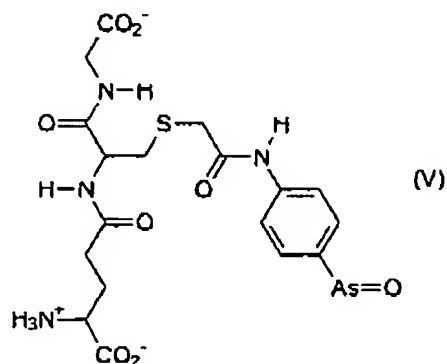
wherein the substituents directly attached to the phenylene ring are in a para-, meta- or ortho- relationship. [[.]]

18. (Currently amended) The compound or salt thereof according to claim 1 represented by Formula III:

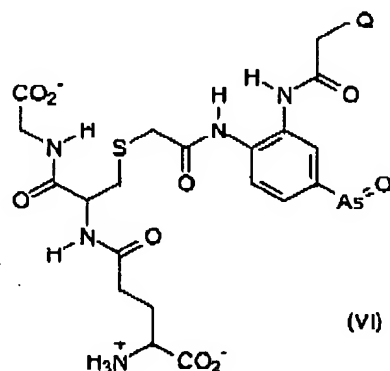


, and wherein

- $R_7$  to  $R_{10}$  are independently selected from the group consisting of: hydrogen,  $C_1$ - $C_5$  alkyl,  $C_6$ - $C_{12}$  aryl, halogen, hydroxy, amino, nitro, carboxy,  $C_1$ - $C_5$  alkoxy,  $-\text{OS}(\text{O})_2\text{R}_3$  or  $-\text{NHC}(\text{O})\text{CH}_2\text{Q}$  wherein Q is halogen,  $-\text{OS}(\text{O})_2\text{CH}_3$ ,  $-\text{OS}(\text{O})_2\text{C}_6\text{H}_5$  or  $-\text{OS}(\text{O})_2$ -p-tolyl.
19. (Currently amended) The compound or salt thereof according to claim 18, wherein  $R_7$  to  $R_{10}$  are independently selected from hydrogen, halogen, hydroxy, amino, nitro, carboxy,  $C_1$ - $C_5$  alkoxy, methyl, ethyl, iso-propyl, tert-butyl, phenyl, and  $-\text{NHC}(\text{O})\text{CH}_2\text{Q}$  wherein Q is halogen,  $-\text{OS}(\text{O})_2\text{CH}_3$ ,  $-\text{OS}(\text{O})_2\text{C}_6\text{H}_5$ , or  $-\text{OS}(\text{O})_2$ -p-tolyl.
20. (Currently amended) The compound or salt thereof according to claim 18, wherein the arsenoxide ( $-\text{As}=\text{O}$ ) group is at the 4-position of the phenylene ring.
21. (Currently amended) The compound or salt thereof according to claim 1, wherein the compound is 4-(N-(S-glutathionylacetyl)amino)phenylarsenoxide (GSAO) and is represented by Formula V:

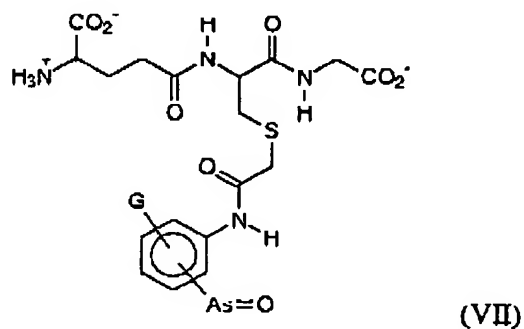


22. (Currently amended) The compound or salt thereof according to claim 1, wherein the compound is represented by Formula VI:



wherein Q is any halogen.

23. (Currently amended) The compound or salt thereof according to claim 1, wherein the compound is represented by Formula VII:



wherein G is selected from the group consisting of: hydrogen, halogen, hydroxy, amino, nitro, carboxy, C<sub>1</sub>-C<sub>5</sub> alkoxy, C<sub>1</sub>-C<sub>3</sub> alkyl and C<sub>6</sub>-C<sub>12</sub> aryl and -NHC(O)CH<sub>2</sub>Q wherein Q is halogen, -OS(O)<sub>2</sub>CH<sub>3</sub>, -OS(O)<sub>2</sub>C<sub>6</sub>H<sub>5</sub> or -OS(O)<sub>2</sub>-p tolyl.

24. (Currently amended) The compound or salt thereof according to claim 23, wherein G is selected from the group consisting of: hydrogen, halogen, hydroxy, amino, nitro, carboxy, C<sub>1</sub>-C<sub>5</sub> alkoxy, methyl, ethyl, iso-propyl, tert-butyl, phenyl, and -NHC(O)CH<sub>2</sub>Q wherein Q is halogen, -OS(O)<sub>2</sub>CH<sub>3</sub>, -OS(O)<sub>2</sub>C<sub>6</sub>H<sub>5</sub> or -OS(O)<sub>2</sub>-p tolyl.
25. (Currently amended) The compound or salt thereof according to claim 23, wherein G is selected from the group consisting of hydroxy, fluorine, amino, and nitro.
- 26-29. (Canceled)
30. (Currently amended) The compound or salt thereof according to claim 1, which is linked to a detector group.
31. (Currently amended) The compound or salt thereof of claim 30, wherein said detector group is selected from the group consisting of fluorophore, biotin, a radionucleotide, fluorescein, and a group comprising a transition element.
32. (Currently amended) The compound or salt thereof according to claim 30, wherein the detector group is biotin.
33. (Currently amended) The compound or salt thereof according to claim 31, wherein the radionucleotide is selected from the group consisting of <sup>3</sup>H, <sup>14</sup>C, <sup>32</sup>P, <sup>33</sup>P, <sup>35</sup>S, <sup>125</sup>I, <sup>131</sup>I, <sup>123</sup>I, <sup>111</sup>In, <sup>105</sup>Rh, <sup>153</sup>Sm, <sup>67</sup>Cu, <sup>67</sup>Ga, <sup>166</sup>Ho, <sup>177</sup>Lu, <sup>186</sup>Re, <sup>188</sup>Re, and <sup>99m</sup>Tc.
34. (Currently amended) The compound or salt thereof according to claim 33, wherein the radionucleotide is selected from the group consisting of <sup>3</sup>H or <sup>14</sup>C.
- 35-37 (Canceled)

38. (Currently amended) A pharmaceutical composition comprising a compound or salt thereof of claim 1, together with a pharmaceutically acceptable carrier, adjuvant and/or diluent.

39-43. (Canceled)

44. (Currently amended) The compound or salt thereof according to claim 24, wherein G is selected from the group consisting of hydroxy, fluorine, amino, and nitro.

45. (previously presented) A compound according to Formula (I) or a salt thereof:



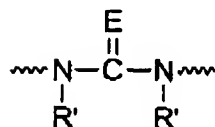
wherein

A comprises at least one substantially cell-membrane impermeable pendant group selected from natural, unnatural and synthetic amino acids, peptides, polypeptides, thiol containing proteins and oligosaccharides, or a combination thereof;

X is selected from NR-, S(O)-, -S(O)O-, -S(O)<sub>2</sub>-, -S(O)<sub>2</sub>O-, -C(O)-, -C(S)-, -C(O)O-, C(S)O-, -C(S)S-, -P(O)(R<sub>1</sub>)-, -P(O)(R<sub>1</sub>)O-, or is absent;

B is selected from C<sub>1</sub>-C<sub>10</sub> alkylene, C<sub>2</sub>-C<sub>10</sub> alkenylene, C<sub>2</sub>-C<sub>10</sub> alkynylene, C<sub>3</sub>-C<sub>10</sub> cycloalkylene, C<sub>5</sub>-C<sub>10</sub> cycloalkenylene, C<sub>3</sub>-C<sub>10</sub> heterocycloalkylene, C<sub>5</sub>-C<sub>10</sub> heterocycloalkenylene, C<sub>6</sub>-C<sub>12</sub> arylene, heteroarylene or C<sub>2</sub>-C<sub>10</sub> acyl;

X' is selected from NR-, -O-, -S-, -Se-, -S-S-, S(O)-, -OS(O)-, OS(O)O-, -OS(O)<sub>2</sub>-, OS(O)<sub>2</sub>O-, -S(O)O-, -S(O)<sub>2</sub>-, -S(O)<sub>2</sub>O-, -OP(O)(R<sub>1</sub>)-, -OP(O)(R<sub>1</sub>)O-, -OP(O)(R<sub>1</sub>)OP(O)(R<sub>1</sub>)O-, -C(O)-, -C(S)-, -C(O)O-, C(S)O-, -C(S)S-, -P(O)(R<sub>1</sub>)-, -P(O)(R<sub>1</sub>)O-,



or is absent; wherein E is O, S, Se, NR or N(R)<sub>2</sub><sup>+</sup>;

and

B' is selected from C<sub>1</sub>-C<sub>10</sub> alkylene, C<sub>2</sub>-C<sub>10</sub> alkenylene, C<sub>2</sub>-C<sub>10</sub> alkynylene, C<sub>3</sub>-C<sub>10</sub> cycloalkylene, C<sub>5</sub>-C<sub>10</sub> cycloalkenylene, C<sub>3</sub>-C<sub>10</sub> heterocycloalkylene, C<sub>5</sub>-C<sub>10</sub> heterocycloalkenylene, C<sub>6</sub>-C<sub>12</sub> arylene, and heteroarylene, or is absent;

wherein

each R is independently selected from hydrogen, C<sub>1</sub>-C<sub>10</sub> alkyl, C<sub>2</sub>-C<sub>10</sub> alkenyl, C<sub>2</sub>-C<sub>10</sub> alkynyl, C<sub>3</sub>-C<sub>10</sub> cycloalkyl, C<sub>5</sub>-C<sub>10</sub> cycloalkenyl, C<sub>3</sub>-C<sub>10</sub> heterocycloalkyl, C<sub>5</sub>-C<sub>10</sub> heterocycloalkenyl, C<sub>6</sub>-C<sub>12</sub> aryl, heteroaryl, OR<sub>2</sub> or C<sub>2</sub>-C<sub>10</sub> acyl;

R' is the same as R or two R' are taken together with the nitrogen atoms to which they are attached to form a 5 or 6-membered saturated or unsaturated heterocyclic ring;

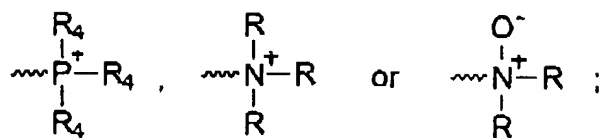
each R<sub>1</sub> is independently selected from hydrogen, C<sub>1</sub>-C<sub>10</sub> alkyl, C<sub>2</sub>-C<sub>10</sub> alkenyl, C<sub>2</sub>-C<sub>10</sub> alkynyl, C<sub>3</sub>-C<sub>10</sub> cycloalkyl, C<sub>5</sub>-C<sub>10</sub> cycloalkenyl, C<sub>3</sub>-C<sub>10</sub> heterocycloalkyl, C<sub>5</sub>-C<sub>10</sub> heterocycloalkenyl, C<sub>6</sub>-C<sub>12</sub> aryl, heteroaryl, halo, OR<sub>2</sub> or N(R)<sub>2</sub>;

each R<sub>2</sub> is independently selected from hydrogen, C<sub>1</sub>-C<sub>10</sub> alkyl, C<sub>2</sub>-C<sub>10</sub> alkenyl, C<sub>2</sub>-C<sub>10</sub> alkynyl, C<sub>3</sub>-C<sub>10</sub> cycloalkyl, C<sub>5</sub>-C<sub>10</sub> cycloalkenyl, C<sub>3</sub>-C<sub>10</sub> heterocycloalkyl, C<sub>5</sub>-C<sub>10</sub> heterocycloalkenyl, C<sub>6</sub>-C<sub>12</sub> aryl, heteroaryl or -C(O)R<sub>5</sub>;

each R<sub>5</sub> is independently selected from hydrogen, C<sub>1</sub>-C<sub>10</sub> alkyl, C<sub>2</sub>-C<sub>10</sub> alkenyl, C<sub>2</sub>-C<sub>10</sub> alkynyl, C<sub>3</sub>-C<sub>10</sub> cycloalkyl, C<sub>5</sub>-C<sub>10</sub> cycloalkenyl, C<sub>3</sub>-C<sub>10</sub> heterocycloalkyl, C<sub>5</sub>-C<sub>10</sub> heterocycloalkenyl, C<sub>6</sub>-C<sub>12</sub> aryl, heteroaryl, C<sub>1</sub>-C<sub>10</sub> alkoxy, C<sub>3</sub>-C<sub>10</sub> alkenyloxy, C<sub>3</sub>-C<sub>10</sub> alkynyloxy, C<sub>3</sub>-C<sub>10</sub> cycloalkyloxy, C<sub>5</sub>-C<sub>10</sub> cycloalkenyloxy, C<sub>3</sub>-C<sub>10</sub> heterocycloalkyloxy, C<sub>5</sub>-C<sub>10</sub> heterocycloalkenyloxy, C<sub>6</sub>-C<sub>12</sub> aryloxy, heteroaryloxy, C<sub>1</sub>-C<sub>10</sub> alkylthio, C<sub>3</sub>-C<sub>10</sub> alkenylthio, C<sub>3</sub>-C<sub>10</sub> alkynylthio, C<sub>3</sub>-C<sub>10</sub> cycloalkylthio, C<sub>5</sub>-C<sub>10</sub> cycloalkenylthio, C<sub>3</sub>-C<sub>10</sub> heterocycloalkylthio, C<sub>5</sub>-C<sub>10</sub> heterocycloalkenylthio, C<sub>6</sub>-C<sub>12</sub> arylthio, heteroarylthio, OH, SH or N(R)<sub>2</sub>;

wherein for each instance that B and/or B' is arylene, the substituents directly attached to the respective arylene rings are in a para, meta or ortho relationship, and

wherein each alkylene, alkenylene, alkynylene, cycloalkylene, cycloalkenylen, heterocycloalkylene, heterocycloalkenylen, arylene, heteroarylene and acyl are optionally independently substituted with hydrogen, C<sub>1</sub>-C<sub>10</sub> alkyl, C<sub>2</sub>-C<sub>10</sub> alkenyl, C<sub>2</sub>-C<sub>10</sub> alkynyl, C<sub>3</sub>-C<sub>10</sub> cycloalkyl, C<sub>5</sub>-C<sub>10</sub> cycloalkenyl, C<sub>3</sub>-C<sub>10</sub> heterocycloalkyl, C<sub>5</sub>-C<sub>10</sub> heterocycloalkenyl, C<sub>6</sub>-C<sub>12</sub> aryl, heteroaryl, halo, cyano, cyanate, isocyanate, OR<sub>2a</sub>, SR<sub>a</sub>, nitro, arsenoxide, -S(O)R<sub>3</sub>, -OS(O)R<sub>3</sub>, -S(O)<sub>2</sub>R<sub>3</sub>, -OS(O)<sub>2</sub>R<sub>3</sub>, -P(O)R<sub>4</sub>R<sub>4</sub>, -OP(O)R<sub>4</sub>R<sub>4</sub>, -N(R'')<sub>2</sub>, -NRC(O)(CH<sub>2</sub>)<sub>n</sub>Q, -C(O)R<sub>5</sub>,



wherein R, R<sub>1</sub> and R<sub>5</sub> are as defined above; and

R<sub>2a</sub> is selected from hydrogen, C<sub>1</sub>-C<sub>5</sub> alkyl, C<sub>2</sub>-C<sub>5</sub> alkenyl, C<sub>2</sub>-C<sub>5</sub> alkynyl, C<sub>3</sub>-C<sub>10</sub> cycloalkyl, C<sub>5</sub>-C<sub>10</sub> cycloalkenyl, C<sub>6</sub>-C<sub>12</sub> aryl, -S(O)R<sub>3</sub>, -S(O)<sub>2</sub>R<sub>3</sub>, -P(O)(R<sub>4</sub>)<sub>2</sub>, N(R)<sub>2</sub> or -C(O)R<sub>5</sub>;

each R<sub>3</sub> is independently selected from hydrogen, C<sub>1</sub>-C<sub>10</sub> alkyl, C<sub>2</sub>-C<sub>10</sub> alkenyl, C<sub>2</sub>-C<sub>10</sub> alkynyl, C<sub>3</sub>-C<sub>10</sub> cycloalkyl, C<sub>5</sub>-C<sub>10</sub> cycloalkenyl, C<sub>3</sub>-C<sub>10</sub> heterocycloalkyl, C<sub>5</sub>-C<sub>10</sub> heterocycloalkenyl, C<sub>6</sub>-C<sub>12</sub> aryl, heteroaryl, C<sub>1</sub>-C<sub>10</sub> alkoxy, C<sub>3</sub>-C<sub>10</sub> alkenyloxy, C<sub>3</sub>-C<sub>10</sub> alkynyloxy, C<sub>3</sub>-C<sub>10</sub> cycloalkyloxy, C<sub>5</sub>-C<sub>10</sub> cycloalkenyloxy, C<sub>3</sub>-C<sub>10</sub> heterocycloalkyloxy, C<sub>5</sub>-C<sub>10</sub> heterocycloalkenyloxy, C<sub>6</sub>-C<sub>12</sub> aryloxy, heteroaryloxy, C<sub>1</sub>-C<sub>10</sub> alkylthio, C<sub>3</sub>-C<sub>10</sub> alkenylthio, C<sub>3</sub>-C<sub>10</sub> alkynylthio, C<sub>3</sub>-C<sub>10</sub> cycloalkylthio, C<sub>5</sub>-C<sub>10</sub> cycloalkenylthio, C<sub>3</sub>-C<sub>10</sub> heterocycloalkylthio, C<sub>5</sub>-C<sub>10</sub> heterocycloalkenylthio, C<sub>6</sub>-C<sub>12</sub> arylthio, heteroarylthio or N(R)<sub>2</sub>;

each R<sub>4</sub> is independently selected from hydrogen, C<sub>1</sub>-C<sub>10</sub> alkyl, C<sub>2</sub>-C<sub>10</sub> alkenyl, C<sub>2</sub>-C<sub>10</sub> alkynyl, C<sub>3</sub>-C<sub>10</sub> cycloalkyl, C<sub>5</sub>-C<sub>10</sub> cycloalkenyl, C<sub>3</sub>-C<sub>10</sub> heterocycloalkyl, C<sub>5</sub>-C<sub>10</sub> heterocycloalkenyl, C<sub>6</sub>-C<sub>12</sub> aryl, heteroaryl, C<sub>1</sub>-C<sub>10</sub> alkoxy, C<sub>3</sub>-C<sub>10</sub> alkenyloxy, C<sub>3</sub>-C<sub>10</sub> alkynyloxy, C<sub>3</sub>-C<sub>10</sub> cycloalkyloxy, C<sub>5</sub>-C<sub>10</sub> cycloalkenyloxy, C<sub>3</sub>-C<sub>10</sub> heterocycloalkyloxy, C<sub>5</sub>-C<sub>10</sub> heterocycloalkenyloxy, C<sub>6</sub>-C<sub>12</sub> aryloxy, heteroaryloxy, C<sub>1</sub>-C<sub>10</sub> alkylthio, C<sub>3</sub>-C<sub>10</sub> alkenylthio, C<sub>3</sub>-C<sub>10</sub> alkynylthio, C<sub>3</sub>-C<sub>10</sub> cycloalkylthio, C<sub>5</sub>-C<sub>10</sub> cycloalkenylthio, C<sub>3</sub>-C<sub>10</sub> heterocycloalkylthio, C<sub>5</sub>-C<sub>10</sub> heterocycloalkenylthio, C<sub>6</sub>-C<sub>12</sub> arylthio, heteroarylthio, halo or N(R)<sub>2</sub>;

R<sub>6</sub> is selected from C<sub>1</sub>-C<sub>10</sub> alkyl, C<sub>2</sub>-C<sub>10</sub> alkenyl, C<sub>2</sub>-C<sub>10</sub> alkynyl, C<sub>3</sub>-C<sub>10</sub> cycloalkyl, C<sub>5</sub>-C<sub>10</sub> cycloalkenyl, C<sub>3</sub>-C<sub>10</sub> heterocycloalkyl, C<sub>5</sub>-C<sub>10</sub> heterocycloalkenyl, C<sub>6</sub>-C<sub>12</sub> aryl, heteroaryl, C<sub>1</sub>-C<sub>10</sub> alkylthio, C<sub>3</sub>-C<sub>10</sub> alkenylthio, C<sub>3</sub>-C<sub>10</sub> alkynylthio, C<sub>3</sub>-C<sub>10</sub> cycloalkylthio, C<sub>5</sub>-C<sub>10</sub> cycloalkenylthio, C<sub>3</sub>-C<sub>10</sub> heterocycloalkylthio, C<sub>5</sub>-C<sub>10</sub> heterocycloalkenylthio, C<sub>6</sub>-C<sub>12</sub> arylthio, heteroarylthio, -S(O)R<sub>3</sub>, -S(O)<sub>2</sub>R<sub>3</sub> or -C(O)R<sub>5</sub>.

R'' is the same as R or two R'' taken together with the N atom to which they are attached may form a saturated, unsaturated or aromatic heterocyclic ring system;

Q is selected from halogen and  $-\text{OS}(\text{O})_2\text{Q}_1$ ; wherein  $\text{Q}_1$  is selected from  $\text{C}_1$ - $\text{C}_4$  alkyl,  $\text{C}_1$ - $\text{C}_4$  perfluoroalkyl, phenyl, *p*-methylphenyl;

m is an integer selected from 1 to 5,

Y comprises at least one arsenoxide group;

p is an integer selected from 1 to 10;

n is an integer selected from 0 to 20, and

wherein the sum total of carbon atoms in A and  $(\text{XBX}')_n\text{B}'$  together, is greater than 6.

46.-68. (canceled)